

REMARKS

The Office Action dated July 10, 2007 has been received and carefully reviewed. The preceding amendments and the following remarks form a full and complete response thereto. Claims 1, 14, 27, 35-37, and 40 are amended. Support for the amended claims can be found, inter alia, at paras. 8, 9, 10, 11, and 34-43. Claims 52-54 are newly presented. Claims 52-54 find support, inter alia, in Fig. 17. No new matter is added. Claims 1-54 are pending in this application. Reconsideration and allowance in view of the foregoing amendments and following remarks are requested.

Amendments to the Specification

Specifications paras. 42, 46, 55-58, 65, 70-72, 80, and 92-93 are amended to correct typographical errors and matters of form. No new matter is added. Support for the amendments is found in provisional application 60/464,962 ("prov. app."), which the present application incorporates by reference and claims as its priority application. The amendment to para. 42 finds support in prov. app. Eq. (2). The amendment to para. 46 is supported at prov. app. 7. The amendments to paras. 55-57 are supported at prov. app. 9. Note that in $\underline{y} = (y_1, y_2, y_3, y_4, y_5)$, the leading y includes an underbar; also, all y 's are in lower case italics and all numerals are subscripts. The amendment to para. 58 corrects a grammatical error. The amendment to para. 65 is supported at prov. app. 12. The amendments to paras. 70-72 are supported at prov. app. 12 and prov. app. figs. 1-3. The amendment to para. 80 is supported at prov. app. 13. The amendments to paras. 83, 85-87 are supported at prov. app. Eqs. (13)-(15). Note that in para. 83, α_i is the greek lowercase character alpha followed by the subscript i . Note that in Eqs. (7) and (8), formerly paras. 85 and 86, f_i is the lowercase letter f followed by the subscript numeral 1.

The amendments to paras. 92 and 93 are supported at prov. app. fig. 6 and prov. app. 14 respectively. The amendment to para. 99 is supported at prov. app. 15. The amendment to para. 102 corrects a typographical error.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1, 6-8, 12-13, 25-27, 40-41 and 47-51 were rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent Application No. 2003/0225660 by Noser et al. (Noser) in view of *Financial Analyst Journal* article “The Cost of Institutional Equity Trades” (1998), by Keim and Madhavan (Keim). Applicants respectfully traverse the rejection and submit that claims 1, 6-8, 12-13, 25-27, 40-41 and 47-51 recite subject matter not shown or suggested by the cited references either singly or in combination. (Claims 19-21 were omitted from the Office Action’s first listing of claims rejected in view of the Noser/Keim combination, but were included in the second, “Re” listing of such claims. Applicants believe this inclusion of claims 19-21 amongst those rejected in view of Noser/Keim is erroneous because claims 19-21 are listed as rejected in view of Noser, Keim, and Efron and the Office Action concedes that Noser does not recite “ranking,” an element of claims 19-21. Office Action at 3-4.)

Amended claim 1, upon which claims 2-13 depend, recites a method for creating a database having a step of collecting security transaction data for a preselected period of time, for a plurality of institutional investors, the transaction data including identity of securities being traded, transaction order sizes, execution prices and execution times. The method further includes a step of grouping the transaction data into groups of orders, wherein each group of orders consists of orders associated with a common category, and a step of calculating cost benchmarks for each group of orders. The method also includes steps of estimating transaction

costs for each institutional investor from the transaction data relative to each of the calculated cost benchmarks for each category of said plurality of common categories and storing the data for the calculated benchmarks and the estimated transaction costs.

Claim 27, upon which claims 28-39 depend, recites a system for ranking security transaction cost performance relative to transaction costs for institutional investors having: processing means for collecting security transaction data for a preselected period of time, for a plurality of institutional investors, the transaction data including identity of securities being traded, transaction order sizes, execution prices, momentum and execution times. The system further has means for grouping the transaction data into groups of orders, wherein each group of orders consists of orders associated with a common category; calculating cost benchmarks for each group of orders; estimating transaction costs for each institutional investor from the transaction data relative to each of the calculated cost benchmarks for each category of the plurality of common categories; and ranking a first investment institution of the plurality of investment institutions based on the estimated transaction costs against the plurality of investment institutions for at least one of the common categories. The system further has storing means for receiving data from the processing means, storing the data, and making data available to the processing means.

Claim 40, upon which claims 41-51 depend, recites a system for ranking security transaction cost performance relative to transaction costs for institutional investors having: a processing unit coupled with a network and configured to collect security transaction data for a pre-selected period of time for institutional investors, where the transaction data includes the identity of the securities being traded, transaction order sizes, execution prices, momentum and execution times. The processing unit is further configured to group the transaction data into

groups of orders, wherein each group of orders consists of orders associated with a common category, to calculate cost benchmarks for each group of orders, to estimate transaction costs for each order from the transaction data relative to each of the calculated cost benchmarks for each category of the plurality of common categories, and to store the data for the calculated benchmarks and the estimated transaction costs in a database. The system further comprises a database unit coupled with the processing unit and configured to communicate with the processing unit, store data, and make data available to the processing unit.

As a result of the claimed configuration, novel systems and methods are provided that generate for institution investors useful, non obvious estimated transactions costs relative to benchmarks for categories of security data, such as, e.g., type, market, market capitalization, and short term momentum. See para. [0034]. From this “peer group” data, a novel and nonobvious graphical or other display can be generated that compares one institutional investor’s performance against a plurality of institution investors for a combination of benchmarks and categories. See, e.g., Fig 17. No combination of references teaches or suggests such a combination of inventive features as claimed in claims 1-54.

Noser is merely directed to systems and methods for analysis of portfolio returns and trade cost measurement based on fiduciary roles. See Title. Noser discloses methods for measuring, not estimating, actual trade costs within a measurement framework. See Abstract, paras. 6-7 of Noser. Noser does not disclose, teach, or suggest grouping transaction data into groups of orders, wherein each group of orders consists of a plurality of orders associated with a common category (e.g., market cap) from a plurality of common categories; calculating a plurality of cost benchmarks for each group; estimating transaction costs for each institutional investor from the transaction data relative to each of the calculated cost benchmarks for each

category of said plurality of common categories and storing the data for the calculated benchmarks and the estimated transaction costs as recited in amended claim 1.

Likewise, Noser does not disclose, teach, or suggest grouping said transaction data into groups of orders, wherein each group of orders consists of a plurality of orders associated with a common category from a plurality of common categories; calculating a plurality of cost benchmarks for each group; estimating transaction costs for each institutional investor from the transaction data relative to each of the calculated cost benchmarks for each category of the plurality of common categories; and ranking a first investment institution of the plurality of investment institutions based on the estimated transaction costs against the plurality of investment institutions for at least one of the common categories as recited in amended claim 27. (The Office Action expressly concedes that Noser does not teach ranking. Office Action at 4.)

Likewise, Noser also does not disclose, teach, or suggest a processing unit configured to group said transaction data into groups of orders, wherein each group of orders consists of a plurality of orders associated with a common category from a plurality of common categories, to calculate a plurality of cost benchmarks for each group, estimate transaction costs for each order from the transaction data relative to each of the calculated cost benchmarks for each category of the plurality of common categories, and to store said data for said calculated benchmarks and said estimated transaction costs in a database as recited in amended claim 40.

Keim fails to cure the above-described deficiencies of Noser. Keim is a review article presenting an overview of findings in the literature on the cost of U.S. equity trades for institutional investors. See Abstract. Keim teaches the use of cost benchmarks to estimate a transaction cost. However Keim, like Noser fails to disclose, teach, or suggest grouping transaction data into groups of orders, wherein each group of orders consists of a plurality of

orders associated with a common category from a plurality of common categories, calculating a plurality of cost benchmarks for each group, and estimating transaction costs for each order from the transaction data relative to each of the calculated cost benchmarks for each category of the plurality of common categories. Thus, the combination of Noser and Keim fails to put the public in possession of the claimed subject matter. Because the combination of Noser and Keim fail to disclose, teach, or suggest each limitation of the claims, the rejection of independent claims 1, 27, and 40 and dependent claims 6-8, 12-13, 25, 26, 41 and 47-51 is improper and Applicants respectfully request that the rejection be withdrawn.

With regard to claims 6 and 8, the rejection is improper for the additional independent reason that the cited references do not disclose the recited cost benchmarks C_{T-I} , VWAP, C_{T+I} , C_{T+20} , O_T , and M_T . With regard to claims 7 and 8, the rejection is improper for the additional independent reason that the cited references do not disclose that the estimating step takes into consideration a number of cost factors per order as claimed. With regard to claims 12 and 47, the rejection is improper for the additional independent reason that the cited references do not disclose calculating cost benchmarks in real-time as transactions are executed. With regard to claim 41, 47, and 48, the rejection is improper for the additional independent reason that Noser and Keim do not disclose regressing transaction costs onto a plurality of percentiles (this is conceded in the Office Action at 3 with regard to Noser; Keim does not remedy this deficiency). With regard to claims 25-27, 40-41, and 47-51, the rejection is improper for the additional independent reason that Noser and Keim do not disclose ranking as claimed (this is conceded in the Office Action at 4 with regard to Noser; Keim does not remedy this deficiency). With regard to claims 49-51, the combination of Noser and Keim fails to disclose displaying a ranking for a selected institutional investor as claimed. Therefore, for at least these additional and

independent reasons, the rejection of claims 6-8, 12, 25-27, 40, 41, and 47-51 is improper and Applicants request that the rejection be withdrawn.

Claims 2-5, 9-11 and 42-46 were rejected under 35 U.S.C. § 103(a) as obvious over Noser and Keim as applied to claim 1, in further view of the *Statistica Sinica* journal article “Regression Percentiles Using Asymmetric Squared Error Loss” (1991), by Efron. Applicants respectfully traverse the rejection and submit that claims 2-5, 9-11, and 42-46 recite subject matter that is not shown or suggested by the combination of cited references.

As described above, the combination of Noser and Keim fails to disclose or suggest each and every feature of claims 1 and 40, upon which claims 2-5, 9-11, and 42-46 depend. Applicants submit that Efron fails to cure the above-described deficiencies of the Noser – Keim combination. In particular, Efron does not disclose or suggest grouping transaction data, calculating a plurality of cost benchmarks, or estimating transaction costs, as defined by the claims of the present invention. Thus, the combination of cited prior art fails to disclose each and every feature of claims 2-5, 9-11, and 42-46, and this rejection is improper. Accordingly, Applicants request that the rejection be withdrawn and that claims 2-5, 9-11, and 42-46 be allowed.

The rejection of claims 3-5, 9-11, and 42-46 is improper for the additional independent reason that the combination of Noser, Keim, and Efron fails to disclose, teach, or suggest a regression utilizing the formula $X_i = \alpha_i + \beta_i f(S) + \gamma_i g(M) + \varepsilon_i$, for percentiles $i = 25, 40, 50, 60$ or 75, where each percentile i is assumed to depend linearly on functions f and g of size (S) and momentum (M) respectively, and $(\alpha_i, \beta_i, \gamma_i)$ are regression parameters. Therefore, Applicants

request that the rejection of claims 3-5, 9-11, and 42-46 be withdrawn at least for this additional and independent reason.

The Examiner rejected claims 14, 19-21, 25-27, 32-34, and 38-39 under 35 U.S.C. § 103(a) as obvious in view of Noser and Keim as applied to claim 1 in further view of U.S. Pat. No. 7,016,872 to Bettis. Applicants respectfully traverse the rejection and submit that claims 14, 19-21, 25-27, 32-34, and 38-39 recite subject matter not shown or suggested by the combination of cited references.

Amended claim 14, upon which claims 15-26 depend, recites a method for ranking security transaction cost performance relative to estimated transaction costs for institutional investors. The steps of the method include collecting security transaction data for a preselected period of time, for a plurality of investment institutions, the transaction data including identity of securities being traded, transaction order sizes, execution prices, momentum and execution times. The data is grouped into groups of orders, wherein each group consists of orders associated with a common category. A plurality of cost benchmarks are calculated for each group of orders in the transaction data. Transaction costs are estimated for each investment institution relative to each of the calculated cost benchmarks for each category of the plurality of common categories. That is, for each investment institution, transaction costs are estimated for the groups of orders associated with that investment institution relative to the performance of the benchmarks for that group, for each category of the common categories. The institutions can then be ranked against the entire set of institutions based on the estimated transaction costs for at least one of the common categories. Amended claim 27, upon which claims 28-39 depend, is already described above.

As described above, the Noser – Keim combination fails to disclose or suggest each and every feature of claims 14 and 27, upon which claims 15-26 and 28-39 depend. Applicants submit that Bettis fails to cure the above-described deficiencies of Noser and Keim. In particular, Bettis relates to a method for determining a performance score for an investor for comparison with and ranking against other investors. The performance score is determined based upon the historical performance of the investment and does not relate to transaction costs for an institution. See Abstract.

Bettis does not disclose or suggest “grouping said transaction data into groups of orders, wherein each group of orders consists of a plurality of orders associated with a common category from a plurality of common categories; calculating a plurality of cost benchmarks for each group; [and] estimating transaction costs for each investment institution relative to each of said cost benchmarks and to each category of said plurality of common categories” as recited in amended claim 14.

Bettis does not disclose or suggest “grouping said transaction data into groups of orders, wherein each group of orders consists of a plurality of orders associated with a common category from a plurality of common categories; calculating a plurality of cost benchmarks for each group; [and] estimating transaction costs for each institutional investor relative to each of said cost benchmarks and to each category of said plurality of common categories” as recited in amended claim 27.

Therefore, Applicants submit that the combination of cited prior art fails to disclose or suggest each and every element of claims 14, 19-21, 25-27, 32-34, and 38-39 and the rejection is improper. Accordingly, Applicants request that the rejection of independent claims 14 and 27 and dependent claims 19-21, 25, 26, 32-34, and 38-39 be withdrawn.

With regard to claims 19, 21, 32 and 34, the rejection is improper for the additional independent reason that the cited references do not disclose the recited cost benchmarks C_{T-1} , VWAP, C_{T+1} , C_{T+20} , O_T , and M_T . With regard to claims 20, 21, 33 and 34, the rejection is improper for the additional independent reason that the combination of references does not disclose size and momentum as factors for ranking institutional investors. With regard to claims 25 and 38, the rejection is improper for the additional independent reason that the cited references do not disclose calculating cost benchmarks in real-time as transactions are executed. For at least these additional and independent reasons, Applicants request that the rejection of claims 19-21, 25, 32-34, and 38 be withdrawn and that claims 19-21, 25, 32-34, and 38 be allowed.

The Examiner rejected claims 15-18, 22-24, 28-31 and 35-37 under 35 U.S.C. § 103(a) as obvious in view of the combination of Noser, Keim, Bettis and Efron. Applicants respectfully traverse the rejection and submit that claims 15-18, 22-24, 28-31, and 35-37 recite subject matter not shown or suggested by the combination of cited references.

As described above, the combination of Noser, Keim, and Bettis fails to disclose or suggest each and every feature of amended claims 14 and 27, upon which claims 15-18, 22-24, 28-31 and 35-37 depend. Applicants submit that Efron fails to cure the deficiencies of Noser, Keim, and Bettis. In particular, Efron does not disclose or suggest grouping transaction data, calculating a plurality of cost benchmarks, or estimating transaction costs. Thus, the combination of cited prior art fails to disclose each and every feature of claims 15-18, 22-24, 28-31 and 35-37, and this rejection is improper. Accordingly, Applicants request that the rejection be withdrawn and that claims 15-18, 22-24, 28-31 and 35-37 be allowed.

The rejection of claims 16-18, 22-24, 29-31 and 35-37 is improper for the additional independent reason that the combination of Noser, Keim, Bettis and Efron fails to disclose, teach, or suggest a regression utilizing the formula $X_i = \alpha_i + \beta_i f(S) + \gamma_i g(M) + \varepsilon_i$, for percentiles $i = 25, 40, 50, 60$ or 75 , where each percentile i is assumed to depend linearly on functions f and g of size (S) and momentum (M) respectively, and $(\alpha_i, \beta_i, \gamma_i)$ are regression parameters. Therefore, Applicants request that the rejection of claims 16-18, 22-24, 29-31 and 35-37 be withdrawn at least for this additional and independent reason.

Applicants submit that the references, taken singly or together, fail to disclose, teach, or suggest the inventive features of the claims. Applicants submit that Fig. 17 highlights novel features of the claims in that the present invention allows a novel comparison to be made between investment institutions regarding their transaction costs compared to cost benchmarks.

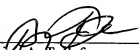
In view of the above remarks, it is believed that the claims satisfy the requirements of the patent statutes and are patentable over the cited art. Reconsideration of the instant application and early notice of allowance are requested. The Examiner is invited to telephone the undersigned if it is deemed to expedite allowance of the application.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account No. 02-2135.

Respectfully submitted,

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